

DOH ARBOVIRUS WEEKLY UPDATE

July 6, 2003

West Nile virus is an emerging infectious disease, and only appeared in the eastern United States in 1999. In 2002, the virus spread to forty-four states in the United States; Oregon, Nevada, Utah and Arizona documented no West Nile virus activity. As of 6 July 2003, West Nile virus has been detected in 31 states. As reported in the MMWR from 12 July 2002, WN activity was documented in only 18 states and the District of Columbia. As part of the West Nile virus surveillance system, the Department of Health (DOH) conducts human, avian, mammal and mosquito surveillance and keeps extensive database and spreadsheet records detailing the surveillance. DOH established a West Nile virus Call Center number at 202-535-2323, a health care and question line at 202-671-0733 and extensive web site information at <http://www.dchealth.dc.gov/>.

The chances of developing symptoms of West Nile virus from the bite of a mosquito are very remote. Much less than one percent of mosquitoes test positive for the virus in areas where the virus is present. And, if bitten by an infected mosquito, a person has less than a one percent chance that he or she will develop symptoms. Generally, the symptoms are very mild and may not even be noticed. Only in very rare cases will the symptoms be severe. Individuals over the age of 60 are the population most at risk. For 2002, the median age for human disease was fifty-five and the median age for mortality was 78. Any person who suspects that they have the virus should contact their doctor immediately.

DOH has trained staff to assist residents with identifying and eliminating potential mosquito-breeding sites and to speak at neighborhood meetings and health fairs. The fundamental components of the West Nile virus plan are prevention and personal protection.

The West Nile virus program is a fluid program that is continually evaluated and altered to protect the public. Mosquito surveillance has been enhanced to assess the risk to public health and safety in the District. It is paramount to track positive mosquito pools and species. As a result of this increased mosquito surveillance, new species of mosquitoes have been identified as positive for West Nile virus in the District.

In 2002, six pools of *Aedes albopictus* tested positive in the District. This species is a daytime human biter and causes increased concern. Previously only *Culex spp.*, a dawn and dusk feeder, tested positive. As a result, DOH has added precautions of protecting residents against mosquito bites at all times during the day and not just dawn and dusk.

Nationally, per CDC, in 2002, there were 4156 cases of West Nile virus infection, including 284 deaths, in the United States. The outbreak was the largest since the virus first appeared in the Western Hemisphere 4 years ago. During the 2002 outbreak, CDC officials confirmed the first known cases in which West Nile was transmitted through organ transplants and blood transfusions. The possibility the virus could be spread through breast milk or sexual contact also has been studied. Although most people who contract West Nile have no symptoms and those who do normally suffer little more than flu-like illness, it is believed they still can carry small amounts of the virus in their blood for several days.

National Capital Region Surveillance Findings

Virginia

On 3 July 2003 two crows tested positive for West Nile virus. The crows were collected from Sterling and Purcellville, both in Loudoun County, Virginia.

District-Wide Mosquito Data

The US Army Center for Health Promotion and Preventive Medicine –North (USACHPM-North) tests all mosquitoes collected within the District. Specimens are submitted from Department of Defense Installations, National Park Services and the Department of Health. As of the Pool and Testing Log Report dated 3 July 2003, 1516 female mosquitoes in 140 pools have been tested. All results were negative. The Department of Health has 464 female mosquitoes awaiting testing. Specimens have been submitted from DoD installations at Walter Reed Army Medical Center and Ft. McNair, National Park Services locations at Rock Creek Park, National Capital Parks-East and the C & O Canal, East. Department of Health trap locations are located in each Ward of the District.

2003 CDC National West Nile Virus Case Summary

USGS surveillance update, as of Wed 2 July 2003

The national and state maps compiled by the United States Geological Survey (USGS) reflect information for the 2003 West Nile virus reporting season that has been submitted and verified to the Centers for Disease Control and Prevention (CDC) up to Wed 18 Jun 2003.

The surveillance maps posted on <<http://westnilemaps.usgs.gov>> are created from data contained in CDC's ArboNET surveillance database. The maps portray summaries of West Nile virus-positive surveillance data reported to the CDC by cooperating health departments and verified to ArboNET. In addition, maps for two surveillance categories (avian and mosquito) will portray counties that have done "testing" of samples for WNV. Discrepancies noted between these data and data presented from other sources reflect local variations in reporting policies and procedures. It is not unusual for cases to be announced in other media before being reported and verified in ArboNET.

The following information is a synopsis of the results of West Nile virus surveillance listed according to state. The original USGS maps further locate both positive and negative surveillance reports by county. (The data are provisional and may be subject to revision.)

Birds

34 states are conducting surveillance with 24 states reporting cumulative positive test results as follows: Alabama (12), Colorado (4), District of Columbia (0), Florida (5), Georgia (9), Illinois (2), Indiana (3), Iowa (4), Kansas (0), Kentucky (0), Louisiana (38), Michigan (7), Minnesota (1), Mississippi (3), Missouri (4), Nebraska (7), Nevada (0), New Hampshire (0), New Jersey (1), New York (1), North Carolina (3), North Dakota (5), Ohio (5), Oregon(0), Pennsylvania (1),

South Carolina (3), South Dakota (0), Tennessee (4), Texas (7), Utah (0), Vermont (0), Virginia (7), Washington (0), Wisconsin (0), Wyoming (1).

[Note that many states do not continue reporting wild bird results after confirmation of the first positive tests in any particular county; therefore the above figures allow relative rather than absolute comparisons. - Mod.CP]

Mosquitoes

17 states are now conducting surveillance, with 7 states reporting cumulative positive results as follows: Colorado (1), Connecticut (0), District of Columbia (0), Georgia (2), Indiana (2), Kansas (1), Kentucky (0), Michigan (12), New Hampshire (0), New Jersey (1), Nevada (0), North Carolina (0), Pennsylvania (0), South Carolina (0), South Dakota (0), Texas (16), Utah (0), Virginia (0).

Sentinel Flocks

3 states are conducting surveillance, with all 3 reporting cumulative positive test results as follows: Florida (38), North Carolina (1), South Dakota (9).

Veterinary

10 states are conducting surveillance and all 10 are reporting cumulative positive test results [presumed to be equines] as follows: Alabama (1), Arkansas (1), District of Columbia (0), Georgia (1), Kentucky (2), Missouri (1), Minnesota (3), North Dakota (1), Texas (4), Wisconsin (1), Wyoming (3).

Human

South Carolina and Texas have reported and verified a single human case each. Texas also has a possible second case that has tested positive for an undifferentiated arbovirus.

CALL CENTER

- DOH established a West Nile Virus Call Center at 202-535-2323 effective April 11, 2003. Residents and visitors are encouraged to call the Call Center to report standing water, mosquito concerns, and dead birds and to request advice and assistance.
- The Call Center, year-to-date, has received over 176 calls regarding standing water, mosquito infestations, larviciding and dead birds.

HUMAN SURVEILLANCE

- In 2003, year-to-date, no specimens have been West Nile virus probable.
- DOH has contacted all hospitals to review protocol for WNV-suspect cases.

- DOH staff conducts active human surveillance.
- DOH staff distributed West Nile virus Physician Alerts by blast fax to health care providers and hospitals detailing the West Nile virus case definition, reporting and specimen collection and submission criteria.
- DOH staff contacts hospital infectious disease practitioners weekly to determine if any patients meet the testing and reporting criteria, effective May 15.
- DOH staff prepares, processes, transports and submits human specimens for testing.
- In 2001, 20 human samples were submitted for testing. All samples tested negative.
- In 2002, 80 human samples were submitted for testing. Thirty-one samples were positive. Three samples were probable, twenty-eight samples were negative and eighteen samples were considered pending because information was not complete.

MOSQUITO SURVEILLANCE

- As of 3 July 2003, 1516 female mosquitoes placed into 140 pools have been tested for West Nile virus, all have been negative.
- Twenty-two gravid traps have been set for the week of June 30-July 6 in Wards 1, 2,3, 4, 5 and 7. Two mosquito magnets have been set on Tuesday, July 1 for collection on Tuesday, July 8. The magnets are located in Wards 2 and 4.
- Specimens collected from the week of June 30-July 6 are as follows; Ward 1-6, Ward 2-3, Ward 3-7, Ward 4-20, Ward 5-146, Ward 7-71 female mosquitoes. Mosquitoes are sent to US Army Center for Health Promotion and Preventive Medicine, Ft. Meade, MD to be sorted into pools. (A mosquito pool consists of 1-25 female mosquitoes of a specific genus and species from the same trap, location and trap night.)
- Year-to-date, 697 female mosquitoes have been collected by DOH and sent for testing.
- Trapping began the first week in June. Trap locations have been determined.
- DOH staff sets gravid traps, throughout the District in each ward per an established grid pattern. A collaborative effort between DOH, National Park Services (NPS) and the Department of Defense (DoD), ensures that trapping locations incorporate all areas of the District.
- DOH staff set mosquito traps and collect specimens from over 30 traps. Traps are set for 2 trap nights per week. Mosquitoes are sorted, prepared for testing and transported the Ft. Meade, MD for arboviral testing.
- The US Army will test all District mosquito specimens for West Nile and other relevant arboviruses and malaria, depending on species.
- In 2001, 870 pools were collected in the District and submitted for testing. Three pools tested positive.
- In 2002, 1315 pools were collected in the District submitted for testing. 84 pools tested positive, including 5 pools of *Aedes sp.* and 79 pools of *Culex spp.* Locations of positive pools are as follows: 3100 blk Conn. Ave (1), Rock Creek Park (17), Ft. McNair (47), US Soldier and Airmen's Home (19).
- There were 19 individual *Anopheles* mosquitoes (possible carrier of malaria) collected and placed into eight pools that were tested for malaria. All pools tested negative.

AVIAN SURVEILLANCE

- 2003: Year to date there have been 96 dead bird reports with the following break-down by ward; Ward 1-5, Ward 2-8, Ward 3-21, Ward 4-15, Ward 5-13, Ward 6-12, Ward 7-11, Ward 8-10.

- | <u>Week</u> | <u>Dead Bird Reports</u> |
|-------------|--------------------------|
|-------------|--------------------------|

April 14-20	4
April 21-27	3
April 28-May 4	6
May 5-11	5
May 12-18	7
May 18-25	3
May 28-June 1	26
June 2-8	19
June 9-15	12
June 16-22	7
June 23-29	5
June 30-July 6	7

- DOH no longer collects and tests dead birds because West Nile virus is considered endemic in the District. Further positive results of dead bird testing do not provide any relevant information. Information will be collected on sightings of dead birds for empirical information.
- Sightings of dead birds are received and compiled at the Call Center. Residents are asked to report the location and physical description of all dead birds. A database will be established and maintained to capture all information.
- Residents are encouraged to dispose of the birds. Specific detailed instructions for disposal are available on the DC Website and at the Call Center.
- In 2000, the first positive bird was collected on September 28, with a total of 5 positive birds for the year.
- In 2001, the first positive bird was collected on July 10. Nine hundred fourteen (914) birds were collected, four hundred forty-four (444) were tested and three hundred sixty (360) tested positive, with a percent of positivity of 81.08%.
- In 2002, the first positive bird was collected on May 1. Nine hundred five (905) birds were collected, three hundred forty (340) were processed for testing, thirty-one (31) tested negative, one hundred thirty-four (134) were disposed of and one hundred seventy-five (175) birds tested positive with a rate of positivity of 84.95%.
- The positive bird breakdown by ward for 2002 was Ward 1-10, Ward 2-8, Ward 3-123, Ward 4-12, Ward 5-2, Ward 6-7, Ward 7-16, and Ward 8-2.

MOSQUITO CONTROL

- Year-to-date 2003, DOH staff has larvicided 982 catch basins. The Ward breakdown is as follows; Ward 1-1 catch basin; Ward 2-15 catch basins; Ward 3-604 basins; Ward 4-346 basins; Ward 5-20 basins; Ward 6-50 basins; Ward 8-14 catch basins.
- Year-to-date 2003, DOH staff has applied larvicidal treatments in alleys with improper drainage, ponds, swamps and park sites in 25 locations, 8 of which are constant bodies of water.
- DOH staff larvicide in response to WNV positive human test results, WNV positive mosquito results, mosquito density and nuisance areas and community concerns. The larvicide, a biological product that kills mosquitoes in the larval stage, is placed in catch basins and in areas of standing or stagnant water.
- In April of 2002, DOH staff began larviciding in the District at locations of positive birds and mosquitoes from the previous year in an eight square block area at each location.
- The larvicide application is repeated approximately every 5-6 weeks.
- Larviciding has been determined to be more effective over a period of time than adulticiding. In 2002, mosquito catches were significantly reduced in areas where larviciding efforts were conducted.
- In 2001, DOH staff larvicided three thousand four hundred ninety-six (3,496) catch basins.
- In 2002, DOH staff larvicided ten thousand eight hundred thirty-five (10,835) catch basins.
- The District does not expect to spray for mosquitoes because of low efficacy; kill offs of non-target species and potential health risks to a high population of persons affected with respiratory problems and compromised immune systems.
- Killing mosquito larva and eliminating mosquito-breeding sites are the most effective practices to reduce the numbers of mosquitoes.
- The Center for Disease Control and Prevention (CDC) recommends that larvicide be used to reduce mosquito populations.
- Year-to-date 2003, DOH staff has larvicided 1591 catch basins. The Ward breakdown is as follows; Ward 1-93 catch basins; Ward 2-93 catch basins; Ward 3-651 basins; Ward 4-489 basins; Ward 5-48 basins; Ward 6-73 basins; Ward 8-39 catch basins.
- Year-to-date 2003, DOH staff has applied larvicidal treatments in alleys with improper drainage, ponds, swamps and park sites in 25 locations, 8 of which are constant bodies of water.

MAMMAL SURVEILLANCE

- DOH staff conducts passive mammal surveillance.
- DOH staff distributed information to vets, pet shops, and horse stable managers detailing reporting and specimen collection and submission criteria and protocol.
- No mammals have tested positive in the District for the last four years.
- Letters to all veterinarians in the District have been sent to assist veterinarians in recognizing, submitted samples for testing and reporting West Nile virus cases.

OUTREACH AND EDUCATION

- In 2003, year to date, approximately 12,200 brochures have been distributed to elderly homes, day care providers and all DC Libraries. Literature has been available at various events.
- DOH Representatives have participated in 7 media interviews with CNN, Channel 7/8, Washington Post, WHUR Radio, Channel 9, Metro Weekly News, and Washington Times.
- DOH has educated participants of the DC Government Safety Fair by setting up a booth, passing out literature and speaking with concerned citizens.
- DOH has prepared an informational brochure emphasizing prevention and protection. The brochure has contact information for the Call Center and website. It has been translated into Spanish, Chinese, Korean and Vietnamese.
- DOH has developed space on the DOH website to provide residents with information, including, the District Arbovirus Surveillance and Response Plan for 2003, methods of controlling mosquitoes, CDC questions and answers, recent press releases and weekly updated surveillance reports.
- DOH has developed an informational script and power point presentation for community presentations.
- In 2002, DOH staff distributed brochures door to door to 46,987 residences, and spoke to residents about prevention and protection techniques. DOH distributed approximately 201,250 brochures in bulk.
- Brochures have been distributed by request to private citizens, day care centers, senior citizen homes, residential housing, hospitals, libraries, schools, parks and recreation centers, churches, other District agencies, NSC Coordinators and all ANC Commissioners.